

Exhibit A

EXHIBIT A – JOINT CLAIM CONSTRUCTION CHART (P.R. 4-5(d))

A. U.S. Patent No. 8,406,733

Term No.	Claim Language	Claim Term(s)	Headwater's Proposal	Samsung's Proposal	Court's Construction
1	<p><u>Claim 1.</u> An end-user device comprising:</p> <p>a modem for enabling communication with a network system over a service control link provided by the network system over a wireless access network, the service control link secured by an encryption protocol and configured to support control-plane communications between the network system and a service control device link agent on the end-user device;</p> <p>a plurality of device agents communicatively coupled to the service control device link agent through an agent communication bus, each of the plurality of device agents identifiable by an associated device agent identifier;</p>	“device agents”	Not indefinite; plain and ordinary meaning.	Indefinite.	

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	<p>and memory configured to store an encryption key, the encryption key shared between the service control device link agent and a service control server link element of the network system;</p> <p>wherein the service control device link agent is configured to:</p> <p>receive, over the service control link, an encrypted agent message from the service control server link element,</p> <p>using the encryption key, obtain a decrypted agent message, the decrypted agent message comprising a particular agent identifier and message content for delivery to a particular device agent of the plurality of device agents, the particular agent identifier identifying the particular device agent, the message content from a particular server of a plurality of servers communicatively coupled to the service control server link element, and</p>				

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	<p>based on the particular agent identifier, deliver the message content to the particular device agent over the agent communication bus.</p> <p><u>Claim 19.</u> The end-user device recited in claim 1, further comprising a user interface, and wherein the particular device agent is configured to assist in presenting a notification through the user interface, the notification based on the message content.</p> <p><u>Claim 26.</u> The end-user device recited in claim 1, wherein the particular device agent comprises software.</p> <p><u>Claim 30.</u> A method performed by an end-user device, the method comprising:</p> <p>receiving, over a service control link, an encrypted agent message from a network element, the service control link secured by an encryption protocol, the service control link supporting</p>				

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	<p>control-plane communications between a service control device link agent on the end-user device and the network element;</p> <p>using an encryption key shared between the service control device link agent and the network element, obtaining a decrypted agent message, the decrypted agent message comprising a particular agent identifier and message content for delivery to a particular device agent of a plurality of device agents on the end-user device, each of the plurality of device agents identifiable by an associated device agent identifier and communicatively coupled to the service control device link agent through an agent communication bus, the particular agent identifier identifying the particular device agent, the message content from a particular server of a plurality of servers communicatively coupled to the network element; and</p>				

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	delivering the message content to the particular device agent over the agent communication bus based on the particular agent identifier.				
2	<u>Claim 19</u> . The end-user device recited in claim 1, further comprising a user interface, and wherein the particular device agent is configured to assist in presenting a notification through the user interface, the notification based on the message content.	“wherein the particular device agent is configured to assist in presenting a notification through the user interface, the notification based on the message content”	Not indefinite; plain and ordinary meaning.	Indefinite.	

B. U.S. Patent No. 9,198,117

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3	<u>Claim 1</u> . A network system comprising: a plurality of device messaging agents , each executable on a respective one of a plurality of mobile end-user devices configured to exchange Internet data via a data connection to a wireless network; and	“device messaging agents”	Not indefinite; plain and ordinary meaning.	Indefinite.	

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	<p>a network message server</p> <p>supporting a plurality of secure Internet data connections, each secure Internet data connection between the network message server and a respective one of the mobile end-user devices via a device data connection to a wireless network,</p> <p>the network message server configured to receive, from each of a plurality of network application servers, multiple requests to transmit application data, each such request indicating a corresponding one of the mobile end-user devices and one of a plurality of applications,</p> <p>the network message server to generate corresponding Internet data messages based on the requests, each such message containing at least one application identifier for an indicated application and</p>				

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	<p>application data corresponding to one of the requests, and</p> <p>the network message server to transmit each of the generated Internet data messages to the device messaging agent located on the device indicated in the corresponding request, using the corresponding secure Internet data connection for the device indicated in the corresponding request;</p> <p>each device messaging agent, when executing,</p> <p>to receive the Internet data messages from the secure Internet data connection corresponding to the device executing the device messaging agent, and</p> <p>to, for each received message, map the application identifier in the message to a software process corresponding to the application identifier, and forward the application data in the message to the software</p>				

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	<p>process via a secure interprocess communication service.</p> <p><u>Claim 4.</u> The network system of claim 1, the network message server further to encrypt the secure Internet data messages, the device messaging agents further to decrypt each received message to obtain the corresponding application identifier and application data.</p> <p><u>Claim 5.</u> The network system of claim 4, wherein the secure Internet data messages are transported to the device messaging agent on each device using one or more of encryption on a transport services stack, IP (Internet Protocol) layer encryption, and tunneling.</p> <p><u>Claim 6.</u> The network system of claim 1, wherein the device messaging agent executes in a secure execution environment on at least one of the devices, and at least one of the applications executes outside of the secure execution environment on that</p>				

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	<p>device.</p> <p><u>Claim 12.</u> The network system of claim 1, the device messaging agent on at least one of the devices further to initiate the secure connection to the network message server.</p> <p><u>Claim 13.</u> The network system of claim 1, at least one of the devices having a network stack in communication with the device messaging agent, wherein the secure connection between the network message server and that device is terminated within the network stack.</p> <p><u>Claim 14.</u> The network system of claim 1, wherein at least one of the applications on at least one of the devices and the network application server corresponding to that application authenticate with each other prior to passing application data via the device messaging agent on that device and the network message server.</p> <p><u>Claim 18.</u> The network system of</p>				

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	claim 16, wherein the transmission trigger is the receipt of a transmission from the device messaging agent of the particular device.				
4	<u>Claim 13</u> . The network system of claim 1, at least one of the devices having a network stack in communication with the device messaging agent, wherein the secure connection between the network message server and that device is terminated within the network stack.	“at least one of the devices having a network stack in communication with the device messaging agent, wherein the secure connection between the network message server and that device is terminated within the network stack”	Not indefinite; plain and ordinary meaning.	Indefinite (as of the JCCS filing). Proposal withdrawn by Samsung on June 13, 2024. <i>See</i> Dkt. 96, at 1.	

C. U.S. Patent No. 9,615,192

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5	<u>Claim 1</u> . A message link server comprising: a transport services stack to maintain a respective secure message link through an Internet network between the message link server and a respective device link agent on each of a plurality of wireless end-user devices, each of	“software components”	Not indefinite; plain and ordinary meaning.	Indefinite.	

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	<p>the wireless end-user devices comprising multiple software components authorized to receive and process data from secure message link messages received via a device link agent on that device;</p> <p>an interface to a network to receive network element messages from a plurality of network elements, the received network element messages comprising respective message content and requests for delivery of the respective message content to respective wireless end-user devices, the respective message content including data for, and an identification of, a respective one of the authorized software components; and</p> <p>a message buffer system including a memory and logic,</p> <p>the memory to buffer content from the received network element messages for which delivery is requested to a given one of the wireless end-user devices,</p>				

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	<p>the logic to determine when one of a plurality of message delivery triggers for the given one of the wireless end-user devices has occurred, wherein for at least some of the received network element messages, the receipt of such a message by the message buffer system is not a message delivery trigger, and for at least one of the message delivery triggers, the trigger is an occurrence of an asynchronous event with time-critical messaging needs, and</p> <p>upon determining that one of the message delivery triggers has occurred, the logic further to supply one or more messages comprising the buffered content to the transport services stack for delivery on the secure message link maintained between the transport services stack and a device link agent on the given one of the wireless end-user devices.</p> <p><u>Claim 4.</u> The message link server of claim 1, wherein the device link agent executes in a secure execution environment on at least</p>				

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	<p>one of the devices, and at least one of the software components executes outside of the secure execution environment on that device.</p> <p><u>Claim 15.</u> A method of operating a message link server, comprising:</p> <p>maintaining a respective secure message link through an Internet network between the message link server and a respective device link agent on each of a plurality of wireless end-user devices, each of the wireless end-user devices comprising multiple software components authorized to receive and process data from secure message link messages received via a device link agent on that device;</p> <p>receiving network element messages from a plurality of network elements, the received network element messages comprising respective message content and requests for delivery of the respective message</p>				

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	<p>content to respective wireless end-user devices, the respective message content including data for, and an identification of, a respective one of the authorized software components;</p> <p>buffering content from the received network element messages for which delivery is requested to a given one of the wireless end-user devices;</p> <p>determining when one of a plurality of message delivery triggers for the given one of the wireless end-user devices has occurred, wherein for at least some of the received network element messages, the receipt of such a message is not a message delivery trigger, and for at least one of the message delivery triggers, the trigger is an occurrence of an asynchronous event with time-critical messaging needs; and</p> <p>upon determining that one of the message delivery triggers has occurred, supplying one or more</p>				

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	messages comprising the buffered content for delivery on the secure message link maintained between the message link server and a device link agent on the given one of the wireless end-user devices.				
6	<u>Claim 11</u> . The message link server of claim 1, wherein one of the message delivery triggers is the receipt of a transmission on the respective secure message link from the device link agent of the given one of the wireless end-user devices, or a response generated to a transmission received from that device link agent.	“wherein one of the message delivery triggers is the receipt of a transmission on the respective secure message link from the device link agent of the given one of the wireless end-user devices, or a response generated to a transmission received from that device link agent”	Not indefinite; plain and ordinary meaning.	Indefinite (as of the JCCS filing). Proposal withdrawn by Samsung on June 13, 2024. <i>See</i> Dkt. 96, at 1.	
7	<u>Claim 13</u> . The message link server of claim 1, wherein one of the message delivery triggers is the receipt of a particular network element message from one of the network elements.	“wherein one of the message delivery triggers is the receipt of a particular network element message from one of the network elements”	Not indefinite; plain and ordinary meaning.	Indefinite.	